DOCUMENT RESUME

ED 453 216 TM 032 567

AUTHOR Villalon, Malva; San Francisco, Andrea Rolla
TITLE Assessment and Evaluation of Phonological Awareness, Concepts of Print, and Early Reading and Writing in Young Chilean Children: A Comparison with International Results.
PUB DATE 2001-04-13
NOTE 16p.; Paper presented at the Annual Meeting of the American Educational Research Association (Seattle, WA, April 10-14, 2001).
PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Disadvantaged Youth; *Elementary School Students; *Emergent Literacy; Foreign Countries; Grade 1; Kindergarten; *Kindergarten Children; Primary Education; *Spanish Speaking
IDENTIFIERS *Chile; *Phonological Awareness

ABSTRACT

The development of early literacy was studied in Spanish-speaking children aged 5 to 7 years from disadvantaged backgrounds in Santiago, Chile. The findings are compared to applications of similar tests in other contexts to suggest some universal and specific conclusions about the assessment and evaluation of early literacy. The study used the type of linguistic unit that these Chilean children at this stage of development (kindergarten and first grade) would be able to manipulate. Individual assessments were done of 115 students using the Test of Early Literacy, or the Prueba de Alfabetizacion Inicial, developed to evaluate phonological awareness, concepts about print, reading, and writing in their early stages of development. The data show promising results for the instrument. The results support the idea that the development of early literacy has begun in these kindergarten children even though they have not yet started the process of formal teaching about literacy, where formal literacy instruction is not considered appropriate before first grade. The development of these capacities appears greater in the first grade children, but it is possible to affirm that there is developmental continuity between the two grade levels that reflects the literate context in which these children are raised, rather than differences in teaching methods between the two grade levels in Chile. (Contains 7 tables and 12 references.) (SLD)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 453 216

Assessment and Evaluation of Phonological Awareness, Concepts of Print, and Early Reading and Writing in Young Chilean Children: A Comparison with International Results

Paper
AERA Conference 2001

MALVA VILLALÓN, Ph.D.
PROFESSOR, FACULTY OF EDUCATION,
PONTIFICAL CATHOLIC UNIVERSITY OF CHILE
malva@puc.cl

ANDREA ROLLA SAN FRANCISCO, M.Sc.
DOCTORAL CANDIDATE,
HARVARD UNIVERSITY GRADUATE SCHOOL OF EDUCATION
arolla@alumni.princeton.edu

TM032567

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY
A. San Francisco
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

BEST COPY AVAILABLE

Assessment and Evaluation of Phonological Awareness, Concepts of Print, and Early Reading and Writing in Young Chilean Children: A Comparison with International Results

In the literate environment in which most children are raised, the process of learning to read and write begins before formal teaching in school. Various studies have provided results demonstrating the complexity of the acquisition of these essential cultural tools, in which cognitive and metacognitive skills like phonological awareness, concepts about print, and early reading and writing interact reciprocally. The purpose of this study was to examine the development of early literacy in Spanish-speaking children from disadvantaged backgrounds, considering the diverse skills identified by recent research as relevant. These children from lower socioeconomic levels begin this process with varying levels of the aforementioned cognitive and metacognitive skills.

This paper examines current trends in research in the development of literacy in English and Spanish and describes the application of these trends to the assessment of children 5 to 7 years of age in Santiago, Chile. A description will be provided of the development of an assessment that evaluates early phonological awareness, concepts of print, and emergent literacy, three major areas of recent research in early literacy, that is partially based on the British Literacy Baseline and Reading Progress Tests (Vincent, Crumpler, & de la Mare, 1996). The presentation will offer an analysis of Chilean results in comparison with applications of similar tests in Spanish and in other languages, attempting to come to some universal and language-specific conclusions about the assessment and evaluation of early literacy.

THEORETICAL FRAMEWORK

Recent research in early literacy proliferates and continues to emphasize the complexity of the development of reading and writing processes. This study in particular begins with the theoretical premise that early literacy can be described through the model of emergent literacy (Teale, 1995). This concept of literacy has as its basis cognitive approaches to learning, development, and teaching as well as medical research that has demonstrated the importance of the first years of life. This approach, therefore, results in a change of perspective from the child as a passive recipient of information to the child as an active participant in his own learning.

The basic premises of this concept of emergent literacy are the following:

1) Learning to read and write begins very early in literate societies.

2) Reading, writing, and oral language develop interdependently and concurrently.

3) Literacy develops in authentic contexts, with authentic purposes, and through active interaction with the world.

4) Literacy implies a broad range of knowledge about the functions of literacy, phonemic awareness, concepts about print, and knowledge of letters, among others.

5) Although we can make generalizations about the development of literacy, children develop conventional literacy at different rates and in different ways.

These different capacities contribute to the development and consolidation of literacy development in a dynamic and reciprocal way. The advances in each of these areas influences development in the others. In the literate context in which the majority of children live, this continuous process begins well before the formal teaching of reading and writing. A body of ethnographic and linguistic research has emerged over the last twenty years, describing how literacy concepts, knowledges and skills develop from the first years of life (Purcell-Gates,1996).

A volume of research has permitted the establishment of a significant relationship between learning how to read and write in elementary school and some cognitive and verbal skills that develop during early childhood education, before the formal teaching of reading and writing (Mason & Allen, 1986; Adams,1990; Goswami & Bryant,1990; Purcell-Gates & Dahl,1991; Snow, Burns & Griffin,1998). Children who arrive in first grade with greater letter knowledge, familiarity with environmental print and the capacity to identify and manipulate the sound units of language, are more likely to have later success in conventional literacy tasks. There has been comparatively less research done, however, on the development of early literacy in languages other than English. Information specific to the development of literacy in Spanish is lacking. There are many hypotheses regarding the specific characteristics of Spanish and their effects on literacy development, but little empirical research has been done (Signorini, 1997). It is important, therefore, to continue researching in the area and compare results with other research done on Spanish speakers (e.g., Jiménez & Haro Garcia, 1995; Signorini, 1997; and Vernon, 1998), in order to develop

further theories on literacy development in Spanish. It is equally important to compare theory and research across different languages in order to strengthen both universal and language-specific theories of literacy development.

Therefore, it is essential that the study of the process of early literacy consider some characteristics of the language involved, such as the structure and the nature of its orthography. English, for example, has a great number of monosyllabic words, while Spanish has disyllabic and trisyllabic words for the most part, which affect the kinds of difficulties that children must overcome and the kinds of cognitive skills they must develop in order to learn to read and write. Spanish could be considered a "syllabic" language whose lexicon is composed principally of a small number of distinctive syllables, which makes its decoding easier in a syllable-by-syllable process. A study by Jiménez & Haro Garcia (1995), designed to identify the units of recognition of Spanish-speaking children, did not find any differences in the recognition of non-syllabic units, as there are in English. These differences between the two languages means that the results obtained in other languages are not always directly applicable, in this case, to Chilean children who speak Spanish, demonstrating the importance of studying this problem specifically in children who use a language that is structurally different from English.

Not only is the specific language in question important, but the concern over literacy and academic achievement is also particularly salient in the case of Chile. The results of an evaluation done of the impact of public preschool programs on children's development and achievement showed that between 36 and 49% of the total sample showed deficient cognitive development in preschool and between 50 and 59% had insufficient academic achievement in first grade, with less than 50% of expected gains in reading, writing, and mathematics (Ministerio de Educación, 1998). These results show the challenges that public educational programs must face in order to ensure equality of opportunity for all. They serve the strata of society that has the greatest need for resources in order to attain the goals of quality and equity proposed in Chile's educational reforms. These results demonstrate the need to use to greater advantage the research on cognitive and psycholinguistic development that favors the objective of learning to read and write in the first grade.

A recent study by Bravo (1997) shows that the majority of children in kindergarten and first grade of lower socioeconomic backgrounds have not attained the basic linguistic skills necessary to learn to read and write successfully, including phonemic awareness. The results of this study demonstrate that differences in socioeconomic backgrounds, between children of lower and higher stata, are greater than the differences in age or between preschool education and first grade in children of similar socioeconomic status.

Based on these results and taking into account several other researches that have studied the development of phonological awareness in the Spanish language, this study was designed with the purpose of evaluating the level of early literacy of poor children, with tasks of lesser difficulty than those measured in Bravo's instrument (1997). The present study used the type of linguistic unit that Spanish speaking children at this stage of development and from disadvantaged backgrounds will be able to manipulate, according to previous studies, meaining that word structure and phoneme articulatory properties were controlled in all tasks. This application, although exploratory in nature, permits the identification of the skills of early literacy of poor children and serves as the basis for a possible development of an assessment appropriate to their level of psycholinguistic development, a potentially useful tool for teachers to improve achievements in early literacy.

This study also sought to amplify and broaden knowledge about the development of literacy in poor Spanish-speaking children. Their high-risk situation requires the diversification of assessment procedures in order to define the skills they have achieved and not limit assessment to the determination of a lack of skills. The use of an early literacy instrument in kindergarten and first grade facilitates an analysis of the continuity of this process between the two grade levels, as a basis for improving teaching practices. This study serves to describe and value the literacy knowledge and skills gained by the children before they received formal teaching in reading and writing. This knowledge is often not valued by Chilean preschool and kindergarten teachers, who generally believe that teaching literacy is inappropriate for children under six.

RESEARCH OBJECTIVES

The objective of the overall project was:

- To evaluate the development of literacy skills of Spanish speaking children from low socioeconomic backgrounds in kindergarten and first grade in Chilean public schools.

- To pilot an instrument of evaluation that integrates a variety of skills that research has identified as relevant in literacy development, through a series of tasks that have varying grades of difficulty appropriate to the developmental level of the children being assessed.

RESEARCH METHODOLOGY

Subjects

Individual assessments were done in November and December of 1999 of 115 students in public schools of Santiago, Chile. There were 58 children from kindergarten, 30 boys and 28 girls, and 57 from first grade, 32 girls and 25 boys. The average age for the kindergartners was 6 years with a standard deviation of 4 months and for the first graders was 7 years with a standard deviation of 5 months.

Assessment Instrument

The Test of Early Literacy, or the Prueba de Alfabetización Inicial (PAI), evaluates **phonological awareness, concepts about print**, and **reading and writing in their early stages of development**, through a series of tasks in which the subjects completes several writing tasks and chooses the correct alternative among several images of common objects. The subtests chosen were based on instruments originally utilized with native English speakers. Common words that represented familiar objects were used. They were mostly bisyllabic and were CV'CV, beginning with continuant consonants.

Items of phonological awareness and concepts about print were adapted from the British Literacy Baseline and Reading Progress Tests (Vincent, Crumpler, & de la Mare, 1996). The subtest of letter identification was adapted from Clay's instrument of evaluation (1979). The writing tasks consisted of words selected for the children to write with an increasing level of difficulty in their structure, from simple to intermediate. In part, the categorization and analysis of the writing samples of the children were adapted from Gorman & Brooks (1995).

Briefly, the subtests consisted of the following four areas:

I. **Phonological Awareness,** the awareness of and the capacity of manipulation of phonemes, the units of oral language.

II. **Concepts about Print**, the identification of graphemes and their social functions, and the recognition of writing and its cultural uses.

III. **Reading**, the decoding, recognition, and comprehension of letters, words, and texts.

IV. **Writing**, the production of written symbols and texts.

A preliminary version of these tasks was applied in a pilot study in 1998 to 111 Chilean public school children children of low socioeconomic status, 46 from kindergarten and 65 from first grade. The analysis of these results served as the basis for the design of a more definitive instrument, applied to a new group of subjects with similar characteristics.

Procedure

Each child was evaluated in an individual session in a room used for extracurricular activities in his or her elementary school, following the manual for the Test of Early Literacy. The subjects marked the correct alternative or wrote their responses, depending on the task. Each session lasted approximately 25 minutes.

RESULTS

In relation to the initial objectives, the data obtained show promising results for the instrument of early literacy that was piloted, although an application of the instrument to a greater number of subjects would be necessary in order to consider this information definitive.

An analysis of the reliability of each of the subtests was done, a correlational analysis between each subtest and the test as a whole, and a comparison was done of the levels achieved by the children of both grade levels. As can be observed in Table I, the level of reliability is adecuate in all of the subtests, except in the evaluation of concepts about print, which had fewer items of analysis and therefore fewer points to be scored.

Table I: Reliability Analysis of the Four Areas of the Test of Early Literacy

	Phonological Awareness	Concepts of Print	Letter Identification and Reading	Writing
Alpha	.78	.51	.98	.94
Total Points	20	7	33	32

A high correlation was observed in the different areas that were assessed and the test overall, a result that supported the results of other studies showing the importance of these areas and the relationships among them in early literacy development, as demonstrated in Table II.

Table II: Intercorrelations among the Four Areas Evaluated and the Total Score

	PHONT	PRINT	LETT	WRITE	TOTAL
Phonological Awareness (PHONT)	--				
Concepts about Print (PRINT)	.52 ** p < .0001	--			
Reading and Letters (LETT)	.62 ** p < .0001	.63 ** p < .0001	--		
Writing (WRITE)	.63 ** p < .0001	.61 ** p < .0001	.92 ** p < .0001	--	
Total Score (TOTAL)	.73 ** p < .0001	.69 ** p < .0001	.98 ** p < .0001	.96 ** p < .0001	--

** = statistically significant correlation at the p < .0001 level

A high correlation was also observed among the different tasks evaluated in phonological awareness and the overall score of the subtest of phonological awareness, as can be seen in Table III. All of these correlations were statistically significant. The order of difficulty of these tasks of phonological awareness was the following, from most difficult to least: phoneme segmentation, identification of initial phoneme, rhyme, and phoneme synthesis. Interestingly enough, the rhyme subtest was not significantly correlated with other elements of phonological awareness, only with the overall scores in the area of phonological awareness. This result concurs with results from other studies (e.g., Vernon, 1998) that suggest that rhyme is not a fundamental skill for the development of literacy in Spanish speakers. Jiménez & Haro García (1995) suggests that the onset and rime segmentation, a fundamental skill in order to be able to identify rhymes, is less important in Spanish because there is a direct correspondence between graphemes and phonemes in that language.

The only subtest of phonological awareness that was significantly correlated with other areas of the test (apart from concepts about print) was phoneme segmentation, the most

difficult task of phonological awareness. This result is logical if one considers the fact that the highest scores in the most difficult skill of phonological awareness is associated with better results in other areas of literacy (or, the opposite, that the lowest scores on the most difficult task in phonological awareness is associated with lower scores in other tasks related to early literacy).

Table III: Coefficient Correlation among the Phonological Awareness Tasks and the Overall Score in the Area

	SYNTHESIS OF PHONEMES	RHYMES	PHONEME SEGMENTATION	INITIAL PHONEME
Total Score Phonological Awareness	.64 ** p < .0001	.53 ** p < .0001	.81 ** p < .0001	.71 ** p < .0001

** = statistically significant correlation at the p < .0001 level

In the evaluation of reading, letter recognition was included. The letters children identified most were the vowels and the letters z, m, and s. These results provide further confirmation of the importance of vowels in Spanish and are in concordance with other studies on native Spanish speakers, a language that depends on vowels for its phonetic structure. An interesting result is that a vast majority, 64%, identified the letter z. This result could be anecdotally attributed to the significant influence of the cultural context of the children who were evaluated, many of whom watched a Japanese television program called Dragonball Z. The letter which was least identified was w, with only 22% of the children identifying it, a logical result considering the fact that no words in the Spanish language use that letter.

Table IV: Identification of Letters in Order of Difficulty
(from least to most difficult)
n = 115

	o	i	a	e	z	u	m	s	w
No. of children	87	83	77	74	72	69	67	65	25
Percentage	77%	74%	68%	66%	64%	61%	59%	58%	22%

Comparisons among groups

The comparison of the total scores achieved by the subjects evaluated, according to their grade level, showed that there were no significant differences among subjects of the same grade level, but rather the significant differences were found between grade levels, which had a greater effect than the covariable of age. The average score obtained by the kindergartners was 34, while the first graders obtained an average of 73 points, out of a possible total score of 92 points. The results obtained permit the discrimination by grade level among the subjects evaluated.

Girls had a significantly better level of achievement on the test than boys, with the variable of grade level and age contemplated in this analysis, a result which coincides with similar comparisons between boys and girls in early literacy, at least in other languages. The average score for the girls was 58, while for the boys it was 48.

Table V: Analysis of Variance of the Total Score by Grade Level and by Gender

	GRADE LEVEL	GENDER
F (2)	83.24	8.68
Significance Value	$p < .0001$	$p < .004$

As can be seen in the sixth table, the majority of students in first grade attained 75 to 100% correct in the assessment, while the majority of those in kindergarten obtained less than 50%. However, it is interesting to observe that 16% of kindergartners, despite not having any formal teaching in reading and writing, obtained more than 50% of achievement and 7% of the children of first grade obtained less than 50% of achievement, despite the fact that they have received a year of formal teaching in reading and writing.

Table VI: Scores by Percentage Correct and by Grade Level
n = 115

	0 to 23 points (less than 25% correct)	**24 to 46 points (25 to 50% correct)**	**47 to 69 points (50 to 75% correct)**	**70 to 92 points (75 to 100% correct)**
58 subjects Kindergarten	12 subjects (21% of grade level)	37 subjects (64% of grade level)	8 subjects (14% of grade level)	1 (2% of grade level)
57 subjects First grade	0 subjects	4 subjects (7% of grade level)	13 subjects (23% of grade level)	40 subjects (70% of grade level)

The subjects completed the following various writing tasks, in order of least to most difficult: their name, dictation of two easier words and the writing of two phrases that the children chose (called emergent writing), dictation of a more difficult word, dictation of a sentence, and the written continuation of a story based on an oral response provided by the children. The written items chosen by the children demonstrated a similar level of achievement as the easier words that were dictated. The importance of the cultural significance was indicated by the fact that the easiest task for the children was the writing of their own names.

Table VII: Writing Tasks in Order of Difficulty
(From Easiest to Most Difficult)
n = 115

	Name	Dictation of Two Easier Words	Emergent Writing: Two items	Dictation of Most Difficult Word	Dictation of Sentence	Continuation of Story
No. of Children with Maximum Score	70	52	53 and 49	45	17	14
Percentage	62%	46%	47% and 43%	40%	15%	12%

Discussion and Conclusions

The results obtained support the idea that the development of early literacy has begun in these kindergarten children, even though they have not yet begun the process of formal teaching about literacy. The development of these capacities appears to be greater in the first grade students, but is possible to affirm that there is developmental continuity between the two grade levels, which can be explained in part by the literate context in which these children are raised, since they do not reflect the existing differences in teaching methods between the two grade levels in Chile.

In general, this series of tasks had an acceptable level of reliability. The first subtest, phonological awareness, was significantly correlated with the rest of the subtests and the total score overall. This result supports the findings of other studies previously cited that emphasize the importance of this metacognitive skill in the development of literacy.

The results described here, with the significant correlations among the different subtests of early literacy, support the idea that there are important relationships among phonological awareness, concepts about print, and reading and writing in Spanish. To be more specific, the scores on phonological awareness, reading and letter identification, dictation, writing, and the total score on the test were all significantly correlated, suggesting that these skills may be interrelated.

The word structure and the phoneme articulatory properties were controlled in all the tasks presented in order to make it less difficult than previous assessment of children of the same grades and social backgrounds (Bravo,1997). As was expected, children performed much more better in these tasks, making the identification of different levels of achievement possible. Further longitudinal research will be needed to study if these levels are related to later success in reading and writing.

In terms of the comparisons among groups, significant differences can be observed among children according to their grade level, kindergarten or first grade, and also according to gender. Once the variable of grade level is included in a statistical analysis, the variable of age is not significant.

The results with the significant correlations among the different aspects of early literacy assessed support the idea that there is an important relationship among phonological awareness, concepts about print, and early reading and writing. These poor Chilean children demonstrated a certain baseline of achievement that ought to inform more effective educational interventions in literacy development that would permit them progress equivalent to that of their more affluent peers. The assessments tasks designed presented adequate psychometric characteristics and can be a useful tool for early childhood teachers.

Bibliography

Adams, M.J.(1990) *Beginning to read: Thinking and learning about print.* Cambridge,MA: The MIT Press.

Bravo, L. (1997). "Prueba Experimental Pre-lectora". *Boletín de investigación educacional.* Facultad de Educación, Pontificia Universidad Católica de Chile. 12: 79-90.

Clay, M.M. (1979). *The early detection of reading difficulties.* 3rd ed. Portsmouth, New Hampshire: Heinemann.

Jiménez, J., & Haro García,C. (1995). "Effects of Word Linguistic Properties on Phonological Awareness in Spanish Children." *Journal of Educational Psychology.* 2: 193-201.

Mason, J. & Allen,J. (1986). "A review of emergent literacy with implications for research and practice in reading". In E. Rothkopf, Ed., *Review of Research in Education* (3-48). Washington, DC: American Educational Research Association.

Ministerio de Educación, República de Chile (1998*). Evaluación de Programas de Educación Parvularia en Chile: Resultados y Desafíos*. Santiago de Chile: Ministerio de Educación.

Purcell-Gates,V. (1996). "Stories, coupons and the TV guide: relationships beteen home literacy experiences and emergent literacy knowledge". *Reading Research Quarterly* 31.4: 406-428.

Purcell-Gates,V. & Dahl, K. (1991). "Low SES children's success and failure at early literacy learning in skill-based classrooms". *Journal of Reading Behavior: a Journal of Literacy.* 23: 1-34.

Snow, C., Burns, M.S., & Griffin, P. (1998) *Preventing Reading Difficulties in Young Children.* Washington DC: National Academy Press.

Signorini, A. (1997). "Word Reading in Spanish: A Comparison between Skilled and Less Skilled Beginning Readers." *Applied Psycholinguistics.* 18: 319-344.

Teale, W.H. (1995). "Young Children and Reading: Trends across the Twentieth Century". *Journal of Education.* 177.3: 95-127.

Vernon, S.A. (1998). "Escritura y conciencia fonológica en niños hispano-parlantes." *Infancia y aprendizaje.* 81: 105-120.

Vincent, D., M. Crumpler, & M. de la Mare (1996). *Manual for Stage One of the Reading Progress Tests (For Use with the Literacy Baseline and Reading Progress Tests One and Two).* London: Hodder and Stoughton.

Assessment and Evaluation of Phonological Awareness, Concepts of Print, and Early Reading and Writing in Young Chilean Children: A Comparison with International Results

Paper

AERA Conference 2001

MALVA VILLALÓN, Ph.D.
PROFESSOR, FACULTY OF EDUCATION,
PONTIFICAL CATHOLIC UNIVERSITY OF CHILE
malva@puc.cl

ANDREA ROLLA SAN FRANCISCO, M.Sc.
DOCTORAL CANDIDATE,
HARVARD UNIVERSITY GRADUATE SCHOOL OF EDUCATION
arolla@alumni.princeton.edu